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ii) carrying a pattern of shapes on the surface of said ball, said pattern being formed by contrasting reflective properties on said surface of said ball, and said pattern containing [shapes which are of similar geometry] projected triangular shapes, said [shapes being repeated at a plurality of locations on said surface of said ball,] projected triangular shapes being formed by applying a projection operator to project the flat edges of a triangle to the curved surface of said spherical ball, and,

c) a sensor, said sensor being:

- i) supported by said foundation,
- ii) capable of detecting electromagnetic radiation emanating from a portion of the surface of said ball, and capable of detecting said contrasting reflective properties and said pattern on said ball,

whereby said sensor can detect a given projected triangular shape [geometrical shape from a set of repeating geometrical shapes] and thereby measure the rotation of said ball with respect to said sensor.

21 21. A device for measuring motion corresponding to coordinate information for input to a computer, comprising:

- 1 a2*
- a) a foundation,
 - b) a spherical ball, said spherical ball:

- i) being rotatable with respect to said foundation,
- ii) carrying a pattern of shapes on the surface of said ball, said pattern being formed by contrasting reflective properties on said surface of said ball, and said pattern containing a plurality of curved line segments and a plurality of vertices formed at the intersections of two or more said curved line segments, wherein the angle formed between at least one pair of distinct instances of said line segments is nonorthogonal.

- c) a sensor, said sensor being:

- i) supported by said foundation,
- ii) capable of detecting electromagnetic radiation emanating from a portion of the surface of said ball, and capable of detecting said contrasting reflective properties and said pattern on said ball.

22 22. The device of claim *21*, wherein said pattern on said surface of said ball is based on a Platonic solid whose faces are projected to said surface of said ball.

23 23. The device of claim *21*, wherein said pattern on said surface of said ball is based on a set of triangles whose edges are projected to said surface of said ball.

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9. 24. The device of claim 21, wherein said pattern on said surface of said ball is based on a set of intersecting line segments which are projected to said surface of said ball.

10. 25. The device of claim 21, wherein said pattern on said surface of said ball forms a tiling, wherein a single geometrical shape is repeated at a plurality of locations on the sphere surface.

11. 26. A device for measuring motion corresponding to coordinate information for input to a computer, comprising:

a) a foundation,

b) a spherical ball, said spherical ball:

i) being rotatable with respect to said foundation,

ii) carrying a pattern of shapes on the surface of said ball, said pattern being formed by contrasting reflective properties on said surface of said ball, and said pattern containing a set of repeating geometrical shapes, said set of repeating geometrical shapes covering the entire surface of the said spherical ball, and,

c) a sensor, said sensor being:

i) supported by said foundation,

ii) capable of detecting electromagnetic radiation emanating from a portion of the surface of said ball, and capable of detecting said contrasting reflective properties and said pattern on said ball.

12. 27. The device of claim 26, wherein said pattern on said surface of said ball is based on a Platonic solid whose faces are projected to said surface of said ball.

13. 28. The device of claim 26, wherein said pattern on said surface of said ball is based on a set of triangles whose edges are projected to said surface of said ball.

14. 29. The device of claim 26, wherein said pattern on said surface of said ball is based on a set of intersecting line segments which are projected to said surface of said ball.

15. 30. The device of claim 26, wherein said pattern on said surface of said ball forms a tiling, wherein a single geometrical shape is repeated at a plurality of locations on the sphere surface.